

REMARKS

Claims 1 and 10 have been amended in the manner suggested in Section 6 of the Office Action to specify that the polarity of the common electrode is reversed after each complete scan of the display. No new matter is introduced by these amendments.

The 35 USC 103 rejection of claims 1, 2, 5-7, 9 and 10 as unpatentable over Katase et al., U.S. Published Application No. 2002/0021483, in view of Verschueren et al., U.S. Published Application No. 2006/0007194 is traversed. More specifically, this rejection is traversed on the grounds that, in view of the teachings in Verschueren, it would not be obvious to a skilled worker to using the polarity reversal technique of Verschueren in the Katase device.

In the previous Amendment, applicants argued that Katase does not describe an electrophoretic display unit in which a common electrode undergoes a polarity reversal. The latest Office Action appears to concede that Katase does not unambiguously disclose such a common electrode undergoing a polarity reversal, but states that Verschueren teaches that the voltages applied to the pixel and common electrodes alternate at intervals of one frame length, and that it would have been obvious to one of ordinary skill in the art that the alternating voltage on the common electrode taught by Verschueren could be applied to the display as taught by Katase. However, it is readily apparent from the teaching of Verschueren that the display driving technique there disclosed is intended to be used only with transfective liquid crystal displays, and hence a person of ordinary skill would not consider the Verschueren polarity-reversal technique applicable to the electrophoretic display units of Katase and the present invention.

The very title of Verschueren teaches that it relates to a transfective liquid crystal display with reduced flicker. Verschueren first teaches (see Paragraph 3) that LCD display devices are usually driven by means of alternating voltages across the pixels Other display types such as electromechanical display types and electrophoretic display types may also be driven by alternating voltages. By employing AC driving, Verschueren continues (see Paragraph 4), the degeneration of the liquid crystal materials is

substantially reduced. However, when using AC driving, it has been found that a parasitic DC (Direct Current) component may be produced across the layer of liquid crystal material, and this DC component gives rise to a flicker at half the frequency of the frame frequency used.

Furthermore, according to Verschuere (see Paragraphs 6-7) WO 99/57706 describes how to reduce the flicker *in a reflective display* (emphasis added) by providing a measuring element, e.g., a dummy pixel, and means for applying a voltage to the measuring element during a selection period for measuring the variation of the voltage across the measuring element after the selection period, and means for adapting, depending on the measured voltage variation, a control voltage which is generated by the control means. The control voltage can then be applied to a common electrode of the pixels in order to cancel the internal voltage. However, for transfective displays this technique may not work, because a transfective pixel has a much more complex structure than a reflective pixel, and the internal voltage of the transmissive sub-pixels will generally differ from the internal voltage of the reflective sub-pixels. The measuring element is only able to measure the internal voltage of a simple reflective pixel, and thus the technique of WO 99/57706 is insufficient for solving the problems related to flicker in a transfective display device.

Accordingly, Verschuere proposes (see for example claim 1) a method of reducing visible flicker in a transfective display device having a plurality of pixels, each pixel comprising a transmissive sub-pixel and a reflective sub-pixel, comprising the steps of: driving the pixels with an alternating voltage, determining a first desired compensation voltage for reducing the optical flicker of the transmissive sub-pixels and a second desired compensation voltage for reducing the optical flicker of the reflective sub-pixels; deriving a common compensation voltage from said first desired compensation voltage and said second desired compensation voltage; and applying said common compensation voltage to both the transmissive and the reflective sub-pixels.

In summary, Verschueren teaches that the prior art procedure of WO 99/57706 (which does not involve periodic reversal of the polarity of the common electrode) is satisfactory for reducing flicker in reflective displays, but is not adequate for transfective displays, and proposes a new procedure for correcting flicker in transfective displays which does involve periodic reversal of the polarity of the common electrode. In view of this clear teaching in Verschueren, this reference provides absolutely no incentive for any skilled person to apply periodic reversal of the polarity of the common electrode to a reflective display, such as the electrophoretic displays which form the subject of the present invention.

For the foregoing reasons, none of the present claims are obvious over Katase and Verschueren.

For the foregoing reasons, the 35 USC 103 rejection is unjustified and should be withdrawn.

Reconsideration and allowance of all claims remaining in this application is respectfully requested.

Since the period prescribed for responding to the Office Action expired June 4, a Petition for a three month extension of this period is filed herewith/

Respectfully submitted
/David J. Cole/
David J. Cole
Registration No. 29629

E INK Corporation
733 Concord Avenue
Cambridge MA 02138

Telephone (617) 499-6069
Fax (617) 499-6200
E-mail dcole@eink.com